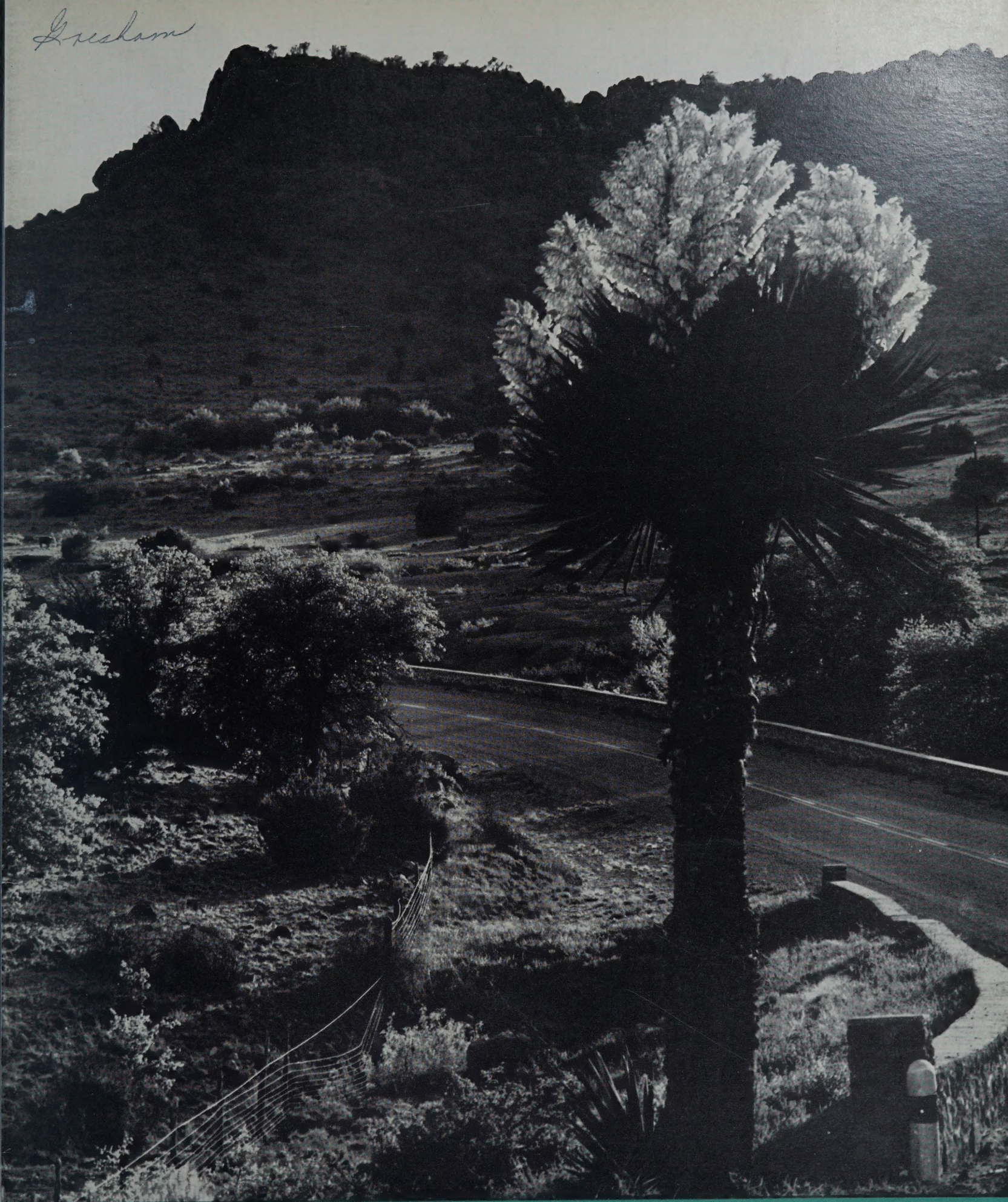
Gresham



Texas Highways

June, 1958 35c

Vacationers take a look out over the Davis Mountains from McDonald Observatory

Texas Highways

Volume 5 • Number 6

June, 1958

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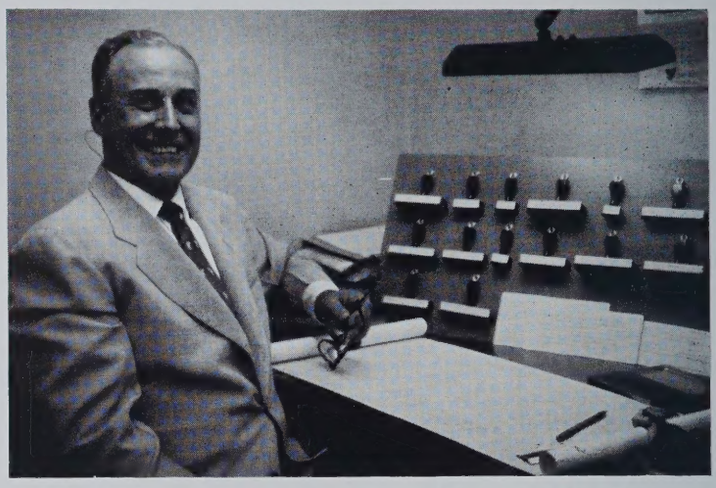
The Quasi Semiautomatic Deed Writer

Christian Knudsen, Engineering Assistant
District 15



"They laughed when I sat down to play."

The advent of the Electronic Computer into the field of right of way preparation has taken much of the drudgery out of the double-meridian distance and the perfect closure. Astride "The Monster" and navigating by independent traverse, we, in Right of Way, are moving mathematically into the Space Age with no two sides parallel and unknown. But in the business of producing the instruments, which are the end products of such calculation, we have scarcely emerged from the Stone Age.

While, nowadays, we are not forced to chisel our deeds in hieroglyphics on the walls of caves, nevertheless we have advanced in this department only into the Quill and Scroll Era. Some wishful thinking has been spent on the possibility of discarding the present scribble and type techniques by the creation of a fitting mate for the "She," into which bearings and distances might be fed and have it regurgitate perfect deeds all ready for signatures. Unfortunately, while the bugs are being worked out of this mechanistic creature, we have had to resort to a simpler medium, the Quasi Semiautomatic Deed Writer.

Anyone who has had experience with abstracting and deed drafting soon is impressed with the repetitious language employed by the deed-writing fraternity and the ubiquitous nature of certain words and phrases found in all deeds and easements. This deliberately unvaried phraseology proves to be the Achilles heel of the problem and allows us to create a gadget, built along fundamental lines, as the first step in deed-writing automation.

This device consists, essentially, of an adequate number of rubber stamps containing carefully selected extracts from the interminable sentence which is a deed. These statements, with letters comparable to those of a typewriter, are double spaced and provided with generously long blank spaces to be filled in by pencil to permit each stamped phrase to be fitted to the case in point. From the standpoint of placing preselected phrases on any given page, the necessary flexibility is provided by the rubber stamp and, if pencil marks are placed on the wooden base to indicate the position of the first word, placement will be easier and less picturesque.

The stamps (fourteen at present writing) are arranged on hooks on a tilted board in the order, from left to right, in which they are ordinarily found in a deed. The vertical part of the hook should be short to expedite removal and replacement of stamps. The proper stamp may be selected, removed for use, returned to the board, and the stamped statements tied together by pencil so that the work of preparing rough drafts is done in a fraction of the time previously required.

Tract No._____

Name Esteban Quintana et ux

Part of 50.0 Acres out of Maria Lucia Torres Survey No. 81,

Abstract No. 67,

Conveyed by Hypolita Mendiola

To Esteban Quintana and wife, Juliana Quintana

Date of Conveyance July 4, 1867 Recorded in Volume 1325 Page 636

the Southwest corner of the Esteban Quintana property in the existing Southeast line of Chughole Road, said Corner being N. 30° 41' W. 28.0

473+70.5

F.M. Highway No. 1234

Southeast

Chughole

single space

N. 35°38'E. 740.7

(Indent) N. 40°13'E. 383.1 and

N. 61°43'E. 796.9 to the

Northwest corner of said Quintana property,

Corner on

539+51.8

S. 71°38'E. 133.5

Southwesterly

left

5669.65

2° 35'

60.0

255.6

S. 30° 08'E. 60.0

P.T.

536+00.0

FIGURE (1)

Rough Draft of Deed

S. 59° S2'W. 60.0

628.6

S. 30° 08'E. 60.0

529+71.4

S. 33° 59'W. 523.7

, in the South line of said Quintana property;

N. 30° 41' W., South , said

109.9

0.002

(Where applicable)

The grantor herein also agrees to quitclaim unto the State of Texas all of their right, title, interest, claim and demand in and to the existing strip of land, ~~approximately _____ feet in width~~, presently occupied by the county road known as Chughole Road and which lies within the proposed right-of-way boundaries of F. M. Highway No. 1234 immediately adjacent to the grantor's Northwest line and between Engineer's Station 473+70.5 and Engineer's Station 539+51.8 on the survey line of said highway, ~~and containing _____ acres of land, more or less.~~

All that ~~those~~ certain tract ~~tracts~~ or parcel ~~parcels~~ of land situated in the County of Bexar, State of Texas; being part of 40.96 acres out of Eligio Gortari Survey No. 2, Abstract No. 5, and Luke Bust Survey No. 37, Abstract No. 45, as conveyed by Antonio Dospapos and wife, Evangelina Dospapos, to Angus McGillicuddy and wife, Lulu McGillicuddy, by deed dated October 6, 1953 and recorded in Volume 3978, Page 544, of the Deed Records of Bexar County, Texas, and more particularly described by metes and bounds as follows, to-wit:

; in the proposed Southeast line of FM Highway No. 4321, N. 62°25'E. 383.9 the new Southwest corner of the Angus McGillicuddy property;

also S. 27° 35'E. 30.7

86+50.0

Said highway

S. 27° 35'W. 250.0

S. 62°25'W. 150.0

N. 27° 35'W. 250.0 , in the proposed Southeast line of F.M. Highway No. 4321,

S. 27° 35'E. 30.7

85+00.0

N. 62° 25'E., along said proposed Southeast line,

150.0

0.861

FIGURE (2)

Rough Draft of Channel Easement.

Experience will, no doubt, dictate the need for additional stamps and better ways of carving up the ones already in use. The zigzag margin, the truncated sentences, and the crazy-quilt spacing, which are characteristic of the Quasi Semiautomatic Deed Writer, are quickly forgiven by the cooperative typist who will have no difficulty in transcribing the material, as furnished between two successive "Thences," into one normal paragraph with proper margin, spacing, and line length. Paragraphing may be made clearer by the use of short, horizontal lines and any indentation or abnormal spacing should be suitably indicated where desired.

In certain cases where there is no placement problem involved as in legal descriptions, the opening paragraphs of easements, and the quitclaim ending of deeds, the statements may be mimeographed with generous blank spaces, double spaced to allow for more particular insertions, and composed in a combination of the singular and the plural so that inapplicable words may be deleted as required.

Typical examples of the product of our deed writer are shown in Figures 1 and 2. Benefits expected are increased speed, unhesitating accuracy in supplying the trite phrase, and significant emancipation from monotonous repetition.

All bearings and distances used therein are wholly fictitious and any resemblance to any field notes, existing or proposed, is purely coincidental. Furthermore, although the sample field notes won't close, it occurs to me that I should.

Effective Detour Sign

District 9 sent in these detour signs which have proved effective in their district.

This detour sign in Lott is seen on U. S. 77, approaching from the south.

These signs are above the roadway on U. S. 81 (Interstate 35) approaching a completed four-lane section.

This same view of U. S. 81 shows the approach from the south.

For the Birds?

Dark Valley Bridge

Rowe R. Howard, Resident Engineer
District 2

Construction of the new Brazos River bridge and approaches on F.M. 4 south of Graford completes one of the last sections of an important connection between the northeast portion of Palo Pinto County and the County Seat of Palo Pinto. It eliminates traveling a rough dirt road and crossing a dangerous 50-year-old suspension bridge or detouring almost 30 miles on what was formerly the shortest paved route.

The recent completion of F.M. 4 reduces the paved distance between Graford, the largest community affected, and Palo Pinto to a convenient ten miles. In addition to the advantages offered local citizens by reducing mileage between these two communities, the new route opens a more direct corridor for longer distance travelers from the south to the recreational area at Possum Kingdom Lake in the northwest part of the county.

It doesn't look very safe, does it?

Construction of the new 880-foot bridge and approximately two miles of approaches and new roadway was begun by the Texas Highway Department in August, 1955, and completed in June, 1957. Contract cost was $267,347.61, of which $23,077.84 was paid by the Brazos River Authority. Participation by the Brazos River Authority was due to the necessity for building the bridge approximately five feet higher than would otherwise have been required in order to clear high water in the lake to be formed by their contemplated Turkey Creek Dam ten miles downstream.

The bridge spans the Brazos a few hundred feet downstream from the spot where boisterous little Dark Valley Creek joins the river—hence, the name Dark Valley Bridge. On the north side a sandy loam second bank slopes gradually, then abruptly down to a short, steep, final descent of fifteen feet to the river. The south

The old suspension bridge with timber flooring gives with the weight of cars.

bank is lined by 40-foot vertical rock cliffs jutting abruptly from the water's edge. This formation permitted the south bridge abutment to be seated directly in a shallow excavation in

the natural rock, while conformation of the north bank required an approach fill on which the abutment was supported by steel piling.

Statistics

Maximum height	70 feet
Length	880 feet
Roadway width	26 feet
Spans	12 (four 60-foot and eight 80-foot spans)
Type	Concrete slab on continuous I-beam spans
Continuous Units	4 (five 120-foot and two 320-foot)
Substructure	42-inch and 36-inch concrete columns on 48-inch and 42-inch drilled shafts
Concrete	1,051 cubic yards
Structural Steel	592,873 pounds
Reinforced Steel	221,914 pounds

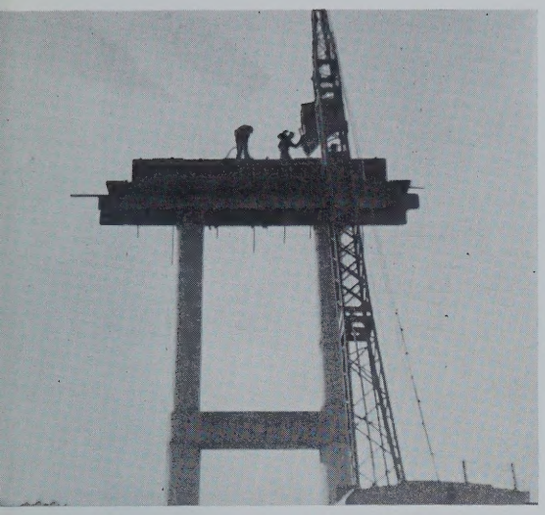
The south cliffs presented the first of many construction problems encountered. They were unscalable, making direct chaining impossible. Highway Department employees Leon Lusk and Bill Stewart surmounted this difficulty by using a triangulation system with the north end of the bridge center line (which could be measured by direct chaining) as a base, and four lines pro-

Steel column bents form the approach to the 50-year-old Dark Valley Bridge.

Dark Valley Creek joins the Brazos River just downstream from the bridge, thus the name of the bridge.

Battered pile is driven for the north abutment.

The south cliff was blasted to approximately a 1:1 slope.

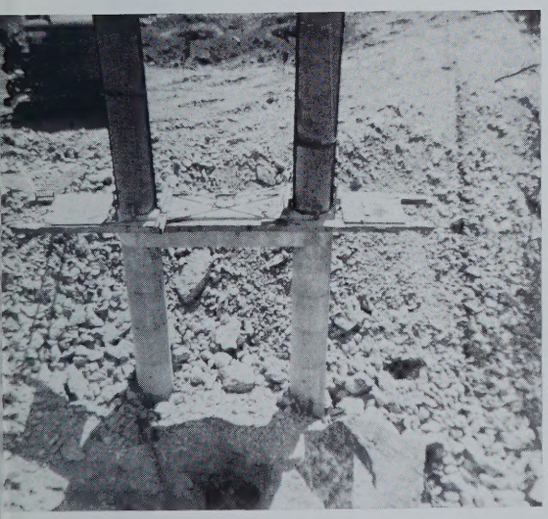


An interior cap is poured on the Dark Valley project.

Steel is set in 320-foot continuous unit.

Note the water in this shot of the forming for cap at Bent 9.

A beam is guided toward the shoe at Bent 7.



The bent and the tie beam are complete. Forms are in place for pouring top of columns.

The two-story framed bents, 1 through 7, show part of steel I-beams in place.

jected from a known point on the center line as subbase lines. From the terminal ends of the subbase lines, which were also measured by direct chaining, a point on the hill above the south end of the bridge could be sighted and the distance to it along the center calculated using the angles measured. Distance from this point back to the south end of the bridge was then measured by direct chaining. Special equipment used for these measurements included 100- and 200-foot calibrated chains and a theodolite.

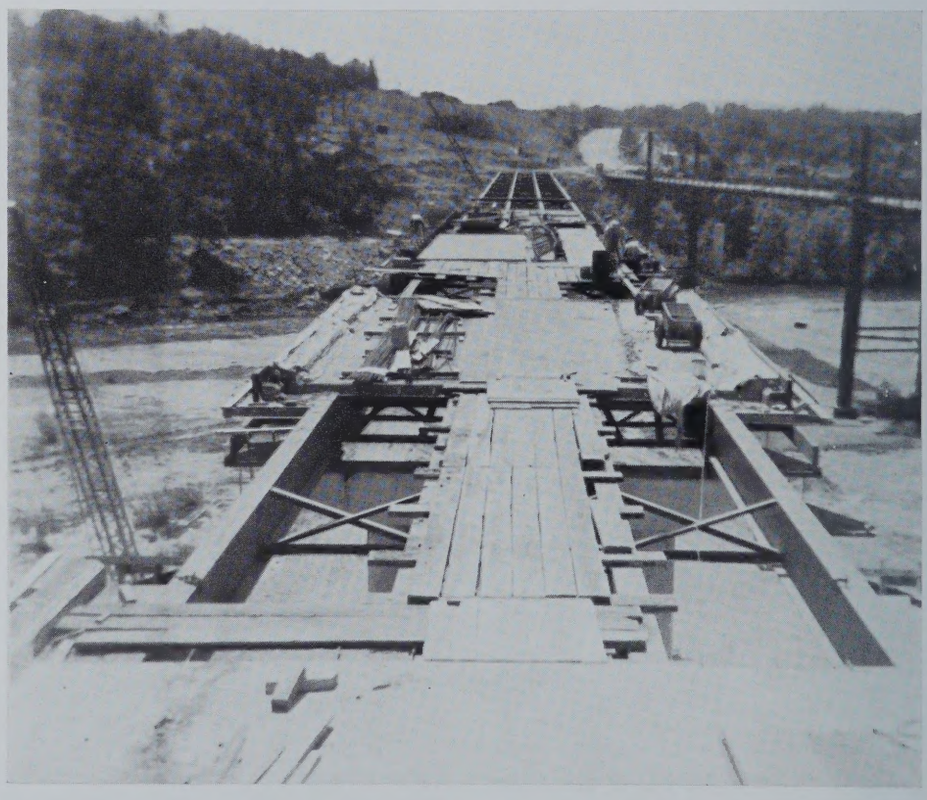
Two other Highway Department employees, Earl Pitman and Burton Clifton, demonstrated similar inventiveness in solving another problem. When the temporary bridge used during construction was washed out by high water, delaying construction of the end bent for the south 320-foot continuous unit, Pitman and Clifton came up with an idea which permitted the welding of steel girders to continue uninterrupted. Specifications required all sections of a particular beam within any given unit to be clamped in place before

Steel is welded on the new 880-foot bridge.

Earl Pitman shoots grades from the top of the cap using a short-legged tripod.

any welding could be done on that beam. As this was impossible due to inability to build the south bent until the water receded, a section of finger joint, weight of which closely corresponded to the reaction which would have been produced by the final section of beam, was suspended from the end of each beam in the unit in turn and welding was allowed to proceed. The result was the rather startling spectacle of four steel I-beams protruding some twenty feet beyond the final pier and terminating in the ozone 70 feet above the swirling Brazos. Much time was saved, however, since welding proceeded uninterrupted until the last bent of the unit could be constructed and final sections added to the beams.

Although construction throughout the bridge was generally standard, the 65-foot height of interior bents prohibited conventional methods of obtaining elevations and alignment and required the use of extraordinary methods. When a steel platform welded to a column of the old suspension bridge proved too unstable



Pictured is forming for the deck of the north 120-foot unit.

Railing is installed on the new Dark Valley Bridge. Top of the old bridge can be seen at the far left of the picture.

The old and the new bridges stand side by side, the old providing sharp contrast for the modern, streamlined structure at right.

Here, we look south through the columns of the new bridge.

The completed bridge has approximately two miles of approaches and new roadway.

Riprap on the north header bank will protect the bridge from the waters of a lake to be formed by a contemplated Turkey Creek Dam.

Contract cost on the new Dark Valley Bridge was $267,347.61.

for satisfactory use, a short-legged tripod was devised. As construction progressed across the river, the inspector was able to give line and grade for each succeeding bent by setting up the instrument with shortened legs on the cap of the preceding bent.

The river was cooperative during the construction, with Possum Kingdom Dam a few miles upstream tending to level out the flow and control potentially damaging rises. One sizable rise occurred in the spring of 1955, but sufficient notice allowed all equipment to be removed from the river bed. Little damage, other than delay of construction, resulted.

As mentioned, most of the construction was standard, and obviously, most of the problems encountered had been met and solved many times previously by other engineers. One occurrence, however, is believed to have been unique to this particular job. This was the mud martin (cliff swallow) invasion which occurred just after the first of the deck slabs were placed. For those ornithologically unlearned, mud martins are birds slightly smaller than a common sparrow. Their nests are of mud and are attached to the underside of any available protected rock or the roof of caverns or, most especially, to the underside of the Dark Valley Bridge.

A few days after the arrival of the first scattered scouts, the air was filled with thousands of the little fellows all busily marring the smooth, not easily attained, finish of slabs, caps, and tie-beams with their unsightly daubings. Since the height of piers made scaling to destroy the nests impractical, a more direct method had to be employed, and for days the cliffs along the river reverberated to the thunder of the Superintendent's shotgun, punctuated by the shrill cries of the martins as the battle raged.

Checks with seasoned birdwatchers have not revealed whether these birds possess the ability to laugh, but if so they must certainly have done so the day the accidentally discharged twelve-gauge blasted a four-inch hole through the floorboards of their tormentor's pickup, and it was thought by careful observers that some of the nests above took on a particular greenish hue closely resembling the color of the antifreeze which gushed from the demolished radiator. Perseverance and marksmanship finally triumphed, however, and the last of the feathered enemies was driven from the field. All concerned breathed easier in the knowledge that the bridge was not, as some unkind observer had been heard to remark, "for the birds."

Cooperative Committee

A meeting of the Joint Cooperative Committee between the Texas Highway Department and the Associated General Contractors brought together Percy Bailey, Clyde Silvus, R. H. Butler, Harvey Deen, Jim Richards, Jed Robinson, D. R. Ward, H. S. Kerr, M. B. Killian, Allen Keller, and T. S. Huff. Purpose: to discuss general problems of mutual interest. This particular meeting, on May 2, was the last for this year of the bimonthly sessions held from September to May.

AWARDS

On April 23, there were 51 service awards passed out to Highway Department employees by members of the Texas Highway Commission in Austin.

The highest award, for 35 years of service, was given to four employees, while 24 earned 30-year certificates. In the 25-year category, there were 23 recipients.

Twenty-one districts and three divisions were represented in the awards ceremony, with thirteen having two or more honorees. District 9's five recipients gave them the distinction of having the largest number of employees getting recognition. Three districts (15, 20, and 21) also shared the spotlight with four award-winning members each.

35-YEAR AWARDS

District 6
- I. R. Titus, Engineer of Special Services

District 16
- F. B. Mason, Supervising Resident Engineer

District 17
- John E. Blair, Principal Engineer Consultant

District 25
- Palmer Massey, District Engineer

30-YEAR AWARDS

D-4
- John L. Heim, Assistant Director, Equipment and Procurement

D-14
- Robert L. Schmidt, Secondary Roads Administrative Engineer

District 1
- C. E. Osburn, Skilled Laborer

District 3
- W. F. Herd, Skilled Laborer

District 5
- J. D. Willson, Senior Maintenance Superintendent

District 6
- V. M. Campbell, Senior Equipment Supervisor
- C. O. Fuentes, Skilled Laborer

District 8
- J. H. Bruton, Senior Maintenance Foreman
- R. E. Hall, Senior Shop Foreman

District 9
- T. E. Ellis, Skilled Laborer
- J. V. Hasley, Senior Maintenance Foreman
- Otha A. Jones, Construction Superintendent
- A. H. Malone, Chief Inspector

District 11
- Roy Beaty, Skilled Laborer
- H. Corbitt, Skilled Laborer
- J. M. York, Assistant District Engineer

District 15
- F. M. Davis, District Engineer
- J. E. Villarreal, Skilled Laborer

District 16
- J. S. Molina, Skilled Laborer

District 17
- Sebron Foster, Skilled Laborer
- H. R. Price, Senior Shop Foreman

District 20
- J. D. Landry, Senior Shop Foreman

District 21
- G. A. Deal, Skilled Laborer
- Antioco Espinoza, Skilled Laborer

25-YEAR AWARDS

Administrative
- Della W. Brooks, Senior Accountant

D-6
- J. R. Harris, Supervising Field Engineer

District 1
- O. W. Spooner, Skilled Laborer

District 2
- J. H. Dilleshaw, Senior Equipment Supervisor

District 3
- J. E. King, Senior Resident Engineer

District 7
- Frank Sessom, Skilled Laborer
- C. C. Stroud, Senior Resident Engineer
- L. K. (Luke) Willis, Assistant District Engineer

District 9
- J. M. Graham, District Bridge Engineer

District 12
- Karl Hackradt, Construction Foreman

District 13
- W. L. Patrick, Senior Resident Engineer

District 14
- J. H. Shearer, Skilled Laborer

District 15
- J. M. Allen, Skilled Laborer
- Thomas L. Webb, Junior Inspector

District 17
- Ruby B. Buchanan, Senior Office Assistant

District 19
- M. H. Wilson, Skilled Laborer

District 20
- L. W. Burton, Chief Inspector
- C. A. Collins, Maintenance Foreman
- Recy Hamilton, Skilled Laborer

District 21
- T. A. Baker, District Designing Engineer
- Tomas Barrera, Skilled Laborer

District 22
- E. A. Sauerwein, Semi-Skilled Laborer

District 24
- E. H. Mendoza, Skilled Laborer

On the first row, left to right, are F. B. Mason, I. R. Titus, J. H. Bruton, V. M. Campbell, F. M. Davis, G. A. Deal, Ruby B. Buchanan, Antioco Espinosa, Sebron Foster, C. O. Fuentes, and R. E. Hall. Second row: J. V. Hasley, John Heim, W. F. Herd, J. D. Landry, A. H. Malone, R. L. Schmidt, J. E. Villarreal, J. D. Wilson, J M. York, and J. M. Allen. Third row: T. A. Baker, Tomas Barrera, L. W. Bruton, C. A. Collins, J. H. Dilleshaw, J. M. Graham, Karl Hackradt, Recy Hamilton, and J. R. Harris. Fourth row: J. E. King, E. H. Mendoza, W. L. Patrick, E. A. Sauerwein, Frank Sissom, J. H. Shearer, O. W. Spooner, C. C. Stroud, T. L. Webb, Luke Willis, and M. H. Wilson.

preservation of a spring

George C. Wall Jr., Senior Resident Engineer
District 2

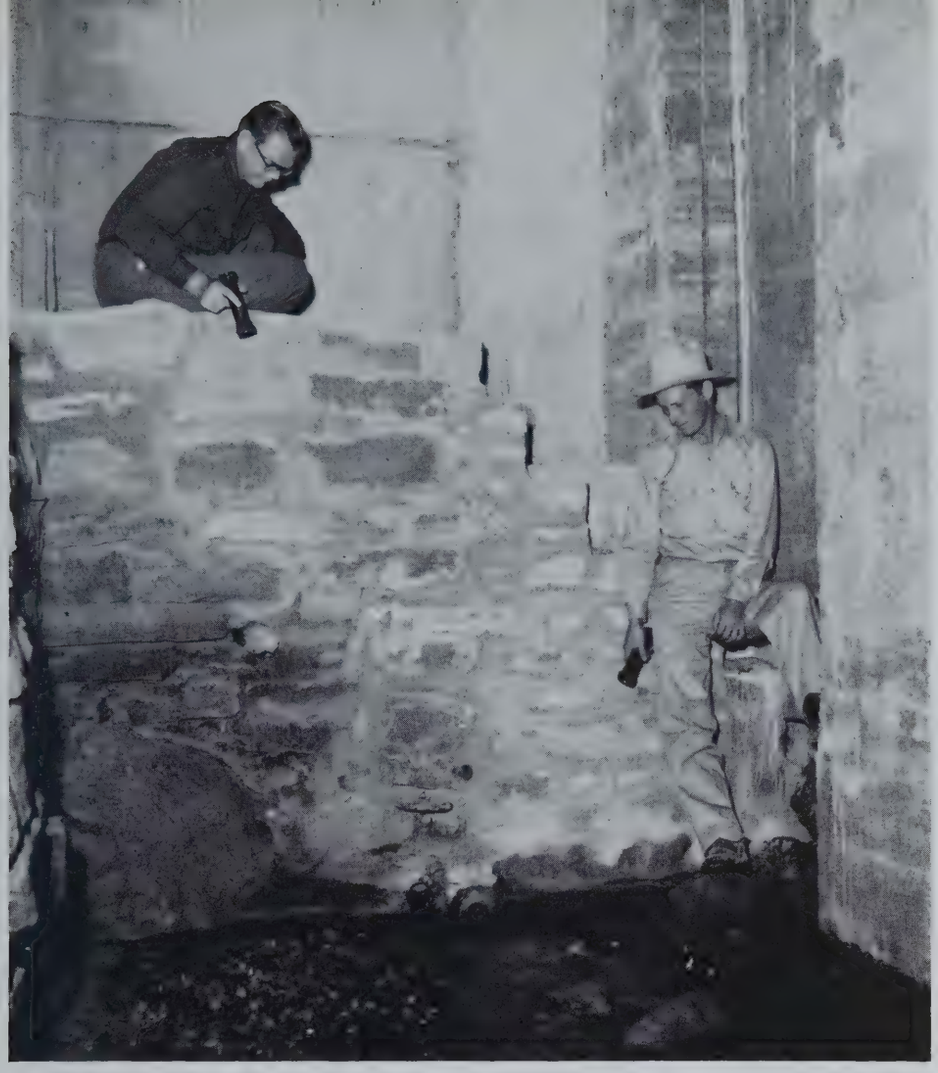
Palo Pinto County has long been known for its hilly, rugged terrain with accompanying location problems. We therefore, were not surprised when it was found necessary to place the relocation of U. S. Highway 180 four and four-tenths miles west of the Brazos River Bridge. This made it directly over a spring which, on subsequent investigation, was shown to have produced water continuously since at least 1879. The spring lay in a dry creek bed which crossed our center line at approximately 45 degrees.

Some thought was given to changing the location at this point, but a move to the north would have entailed carrying this channel in a deep roadway ditch parallel to the center line and caused additional rock excavation on Wynn Mountain to make our embankment on the low ground along the existing channel.

To the south we would have avoided channel difficulties but also would have deepened our cut through Wynn Mountain, a large portion of which is very hard limestone. For these reasons we decided that our location was in the proper place and thoughts of changing it were abandoned.

The property owner over whose land this particular section of location passed was piping water by gravity flow from the spring to his house, to three small rent houses,

This spring provides water for the property owner, three small rent houses, a large minnow tank, and several head of cattle.



The three-inch pipe, which was very rusty, was supplemented by a four-inch pipe from the spring to the right of way line.

Inside dimensions of the spring house are eleven feet by twenty-five feet. It is enclosed by rock masonry.

Inside this box culvert is the spring house.

maintaining a large concrete minnow tank, and watering several head of stock. He was, of course, reluctant to part with this water supply and did not want to exchange it for either a good tank or a well with a pump. Since this spring was his only existing water supply, we decided to protect it with a concrete spring-house cover. The three-inch pipe carrying water away from the spring had been installed in the twenties and was very rusty. Although it was below structural excavation grade, the County supplemented it with a new four-inch galvanized, asphalt-coated pipe from the spring to the right of way line. Here they tied it into his existing three-inch line, thus insuring his ability to pipe the water from under the fill when at some future date the old line rusts completely out.

Immediately east of this spring along the center line is a sandstone hill, and to the west the Wynn Mountain natural ground line rises about 8 per cent. Earthwork dictated a balance point immediately east of the spring at the foot of the sand-

Steel doors fit into the culvert wall to allow the property owner access to the spring for cleaning purposes.

stone hill due to the existing highway crossing twenty feet below grade at this point.

We found it necessary, with a sustained 5 per cent grade west, to have 38 feet of fill over the spring stream bed to keep the cut on Wynn Mountain under 40 feet and to balance earthwork to the west of the spring. Special designs for the proposed drainage structure with its attached spring house were required because of the high fill. The spring proper was enclosed by rock masonry about eight feet by twenty feet, extending about one foot above and three feet below the existing channel grade. The inside dimensions of the spring house were fixed at eleven feet by twenty-five feet to avoid disturbing the existing masonry work. Hydraulic requirements of the drainage area in which the spring lay indicated a double six-by-five box culvert on a 45-degree skew. Since the bottom of the spring house cover had to be open to allow the entrance of water, holes were dug. It was established that spread footings could be founded on sandstone about eight feet below the stream-bed level. With these facts in mind, sketches of the proposed culvert, with the spring house attached, were submitted through channels to the Bridge Division which, in turn, sent us design sketches for detailing the structure. Steel doors were designed to fit into the culvert wall to give the property owner access to the spring for clean-out purposes.

Plans for the entire six-mile relocation were then completed and the contract let. While construction was in progress on the spring house, it was necessary to pump the spring dry for the structural excavation and for the footing pours. The contractor found that he could pump the spring dry with a two-inch pump over a period of several hours, but to speed up the operation, he rented a six-inch pump which would empty the spring in about twenty minutes.

During these pumping operations, the author calculated that the spring was capable of producing about six gallons per minute but that the water would not rise over eight inches above the spring bed. At this point there was an equalization of the head, and the water could not rise to a greater elevation.

A number of crickets found the damp, sunless climate of this spring house to their liking. They took up residence after completion of the structure, and to those of us untrained in the study of entomology there seems to be a rather odd biological phenomenon occurring in this spring house. Succeeding generations of crickets which have made their home here are transparent and have lost their native black coloring. Also, these crickets are afraid of any light.

The project was completed in August of 1953, and as of the present date the spring is still flowing.

MASS MOVEMENT

Nick Johnson
Headquarters Thirty-sixth Infantry Division
Texas National Guard

One of the biggest mass highway movements in the history of Texas took place early in June when the Texas National Guard's Thirty-sixth (Texas) Infantry Division moved its 10,000 men and 1,300 vehicles on a 600,000-mile journey over Texas highways.

The occasion is the annual field-training maneuvers of this huge National Guard organization. Such a movement is almost old hat for this particular group of Texans, however. This is their eleventh such movement—a total of 6½ million miles with no men killed or injured.

Moving overland from 70 Texas cities, the Thirty-sixth Division's men and vehicles had arrived at North Fort Hood, site of the encampment, by 6 o'clock Sunday afternoon, June 8. Two weeks later these same men, riding in the same vehicles, will again take to the highways, this time homeward bound after two solid weeks of concentrated military training.

Mileage has been figured, gas consumption predicted, speed set, and elaborate timetables worked out. If you had asked ahead of time when Private Jack Smith of the Kingsville Guard unit would arrive at the North Fort Hood encampment area, Thirty-sixth Division transportation officers could have told you almost to the moment.

Convoys of trucks, jeeps, and buses flooded onto Texas highways on June 4, 6, and 8, en route to the field-training site. From as far west as El Paso and as far east as Port Arthur; from as far north as Amarillo and Denison and as far south as Laredo and Kingsville, units of the Thirty-sixth Division threaded their ways over 28 different highways in this state.

June 8 was the big day at North Fort Hood. Units arrived every twenty minutes. Two check points were established, by one of which each unit passed. The lead vehicle of each unit flashed a big sign with unit designation. "M Company, 141st Infantry," one would say. Men at the check point checked off that unit, a guide boarded the lead vehicle, and the unit threaded its way through North Fort Hood to its Company area. And the Thirty-sixth Division knew its unit from Cuero has arrived.

That scene was repeated 119 times, as units arrived all during the day until dark.

That night 10,000 men, 10 sedans, 455 jeeps, 182 three-fourth-ton trucks, 450 two and one-half-ton trucks and 3 five-ton trucks were bedded down for the night. At dawn the next morning the 10,000 men and most of the vehicles were back in action, already taking part in the crowded training schedule that has been drawn up.

Arrival day at North Fort Hood can be said to have been June 8. But men and vehicles began arriving four days earlier. Special training schools were held at Fort Hood just prior to the encampment. These began on Thursday and were for selected Guardsmen of the Thirty-sixth Division.

More arrivals were logged in Fri-

Vehicles are lined up for almost as far as eye can see, all in readiness for the Texas National Guard's Thirty-sixth Division's movement to field training at North Fort Hood. A variety of vehicles make up a convoy. Pictured here are a jeep, a two-and-one-half-ton truck, pulling a 150 mm. howitzer, a five-ton wrecker hauling a 155 mm. howitzer, and an amphibious Duck.

day, when each unit's advance detachments arrived. These were skeleton crews of key officers and enlisted men who readied things for the arrival of the main body of each unit Sunday.

The activity on Sunday, then, was not as heavy as that of the departure day two weeks later, June 22. On that day, all men and vehicles of the Thirty-sixth leave the North Fort Hood military reservation.

Beginning at 3 o'clock a.m., a unit will leave Fort Hood approximately every fifteen minutes. By 7:30 that morning every unit will be on the highway. At what time will a particular unit arrive in its home town?

A motorcycle escort leads the beginning of the Thirty-sixth Division's convoy out of Austin during the National Guard's movement to Field Training at North Fort Hood in Central Texas. This is one unit. The scene is repeated 119 times in 70 of Texas' most important cities.

The transportation section of the Thirty-sixth Division can tell you. It has arrival times figured almost to the minute.

Providing gasoline for the movement is, in itself, a tremendous logistic problem. The Thirty-sixth Division has figured that 113,148 tax-free gallons will be required for the move to and from North Fort Hood. Past experience has shown that that figure will not be many gallons off. The transportation section has become skilled in this type thing.

The 1,000 vehicles owned by the Thirty-sixth Division will be loaded with a multitude of equipment, from paper clips to 17,000-pound 155 mm. howitzers. Personnel will be transported, for the most part, aboard commercial buses. About 300 buses are required to transport the men, each traveling an average of 496 miles. In other words, commercial transportation accounts for 148,800 miles.

Passing through cities and towns en route poses one of the biggest difficulties in a movement of this size. In large cities, local police forces provide an escort for the giant convoys.

In smaller towns, the Thirty-sixth takes on the job itself. With each convoy there are a couple of vehicles and a number of men charged with the job of controlling traffic. These precede the convoy into each town. A man is stationed at each intersection to stop traffic, allowing the convoy to pass.

Packing a 10,000-man group into 1,400 vehicles for a 600,000-mile trip is a big job that requires big plans and big thinking. Anyone who has tackled the difficult problem of moving a family of four on a vacation trip can attest to that.

Few four-person families move as smoothly as the 10,000-man Thirty-sixth Division, at that.

JAPANESE VISITORS

Thirteen Japanese engineers visited the Highway Department in April. Accompanying the foreign highway construction team on their five-day study tour of planning and road-building techniques in California, Louisiana, Connecticut, and Texas, were two interpreters and a representative of International Cooperation Administration. ICA sponsored the group, which included a University of Tokyo industrial science professor, research engineers from Japanese cement and iron companies, a representative of a general contracting firm, and several Japanese government engineers. They were here because of the urgent need for highway improvement in their country, which entered a ten-year plan this year to combat the problem.

On their arrival in Austin at the Highway building, J. C. Dingwall, Assistant State Highway Engineer, made a brief speech of welcome. Through interpreters, the Japanese then listened to talks by T. S. Huff, Chief Engineer of Highway Design, on AASHO standards and requirements, and by Paul Tutt and Robert H. Schneider, also of that division, on plans, requirements, and testing of materials and research. Charles Matlock, assisted by Farland Bundy, of Bridge Division, gave an illustrated talk on bridge design.

By bus, the visitors journeyed to San Antonio, studying construction work along the way on the interstate highway. Hank and E. C. Richardson of the Bureau of Public Roads, accompanied them. Construction methods used on roads in Travis and Hays counties were explained by Travis Long, Supervising Resident Engineer in charge of interstate highway projects. At New Braunfels, W. R. Faust, District Administrative Engineer, joined the inspection tour. Two days later, the group left for Houston where Department and Bureau of Public Roads engineers planned a tour of that area to give the visitors an opportunity to observe construction operations, utilization of equipment, and field testing and control of construction materials.

The engineers listen eagerly as the interpreter, back to camera, foreground, translates remarks made by several Highway employees. Note hearing plugs.

Left to right are J. M. Page, Division Engineer, U. S. Bureau of Public Roads, Kunio Masuda, Chief of Laboratory; Tao Road Industrial Company, Ltd.; Shinko Kikegawa, Director, Chief of Engineering Division, Nippon Hodo Company, Ltd.; Seiichi Suzuki, President; Kisha Seizo Kaisha Ltd.; Takeshi Nakajima, (Group Leader) Chief, Chuba Regional Construction Bureau, Ministry of Construction; Kimbe Chujo, Chief of Physical Department, Central Research Laboratory, Nihon Cement Company, Ltd.; Takeo Miyaji, Vice-President, Miyaji Iron Works Company, Ltd.; Gerard J. Lally, Project Manager of International Cooperation Administration, and R. J. Hank, Administrative Engineer for the Texas Highway Department.

Back row, left to right, are: Masao Yanagi, Interpreter; Mitsuo Morimoto, Director; Morimoto Gumi, General Contractor Company, Ltd.; Kano Hoshino, Professor, University of Tokyo; Tsuneo Mishima, (Group Secretary), Engineer Staff, Sumitomo Machinery Co. Ltd.; Denroku Sugie, Chief Engineer; Zenitaka Gumi, General Contractor Company, Ltd.; Taro Nishina, Director, Construction Bureau, Municipal of Yokohama; Kosaburo Watanabe, Chief of Cement Department, Central Research Laboratory, Ube Industries Ldt.; Tomoo Seto, Vice Chief, Civil Engineering Department, Hokkaido Prefectural Government; and Koichiro Kusano, Interpreter.

OVER THE HIGHWAYS

Comments . . . from the Traveling Public

Mrs. Ferris and I have been traveling all the states in the Union plus the provinces of Canada for more years than I care to remember, and are rather critical of highways. . . .

We see more improvement in the Lone Star State than any — be it north, south, west, or east.

You are to be congratulated on foresight, engineering, and planning. Highway 81 from San Antonio, when it is finished, will be the thriller of the country. Even now, with the many detours and improvements in progress, it is breathtaking. You have planned BIG—just like Texas.

We like the surfacing in most parts —the berms, the even rolling and curving so that the driver must be on the alert and not lulled to dullness by too-easy driving.

Just one friendly suggestion. In cities where business routes or bypasses join the main highway, it might be well to study the inclusion of a warning, with approximately the distance till the main road is reached —or as in many instances in the east where a change of lane is desirable, a sign placed early enough saying "Keep Left (or Right) for Main Intersection in ¼ Mile."

It is a pleasure to add our plaudits to many others you must have received complimenting you on your beautiful highways.

W. P. Ferris
Waukesha, Wisconsin

Yesterday we made the drive from McAllen to Falfurrias, Rivera, and back to Raymondville, to see the wild flowers. I wanted to express my appreciation and enjoyment of the flowers. It was a gorgeous sight, and we enjoyed every minute of the drive. . . .

Ruth Hoel
Weslaco, Texas

This is to express a word of appreciation for the beautiful wild flowers along the highway from Victoria to Cuero to Yoakum. . . . Thanks for those which succeeded—shows what seeding and refraining from mowing at proper times can do. Our flowers are among our most beautiful (and valuable, too) assets.

Lourans Stubblefield
Victoria, Texas

Would it be too much out of your way if I was to ask of you one favor? I am a lonely Texan in a foreign country (Georgia) and am very much homesick.

If it isn't asking too much would you please send me the biggest map of Texas you can find? I think this might help if I hang it on the wall and look at it. . . .

Mrs. Ann LaPaglia
Columbus, Georgia

Please send me two copies of the finest official highway travel maps of the finest highways in the finest state in the United States.

I would like one of these maps for a misguided brother-in-law so he can find Utopia.

Allan V. Falkenberg
Houston, Texas

I have just completed a 1,200-mile trip through Louisiana and Mississippi. I must write you and thank you for the good roads that you provide for us with the 8 cents of tax money and for the very efficient manner in which they are marked. The contrast with roads and marking that Louisiana and Mississippi get for 10 and 11 cents respectively is greatly in favor of Texas.

P. E. Nicholls
LaMarque, Texas

I have just made an auto trip from Virginia through Texas. I want to congratulate your state on the following — perfect roads with large, well-graveled shoulders; pleasant wayside rests; well-marked roads; and no bridge tolls.

L. A. Strasburger
New York, New York

To and From Our Readers

Let me be among the many to point out an error, or at least I think so, in the pictures in the April TEXAS HIGHWAYS. Picture 13 sure looks like Gilbert Youngs to me. The old picture, I mean. Why weren't some of we good looking (??) ones included?

Oscar Crain, District Engineer
Lubbock, Texas

P. S. Incidentally that is a good addition to the magazine, using oldtimers that are well known.

Several readers have questioned us about the dogwood since last month's cover appeared. For the benefit of our readers who have never examined a dogwood bloom close up, we offer a picture of one.

"Isn't it wonderful without all those advertising signs to look at on these superhighways!"

About the Cover . . .

A giant dagger lifts its face to the sun in this scene along State Highway 118 about six miles west of Fort Davis.

A winding road, here and there cattle grazing, majestic mountains rising ahead—this scenic Texas highway offers a variety of interests for motorists who are on their way somewhere, or who are just sight-seeing.

This is not the first time a picture taken along this highway has appeared on our cover. Whether this indicates that S. H. 118 is loaded with scenery, or whether we don't have representative pictures of some of the other highways, we are not sure. But you will agree with us, won't you, that this scene is worth a look?

TEXAS HIGHWAY COMMISSION

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Texas Highways

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HIGHWAY SIDELIGHTS

By Gordon K. Shearer
Director Research
Texas State Parks Board

Lofty Guadalupe Peak, highest spot in Texas, overlooks a site chosen in the state for celebration of the centennial year of the Butterfield Stages that carried the Overland Mail from St. Louis to San Francisco.

The mail stages passed below Guadalupe Peak on much the same route as does U. S. Highway 180 between Carlsbad, New Mexico, and El Paso, Texas. To the north of the present highway was Crow Spring, one of the stations on the mail route. Another station was at Hueco Tanks, now being proposed as site for a state park.

In observance of the centennial a caravan of automobiles will traverse a large part of Texas following approximately the route of the mail stages between 1858 and 1861.

The cars will enter Texas at Sherman on September 20. A ten-day tour through the state calls for visits to Albany, Abilene, Sweetwater, San Angelo, McCamey, and Fort Stockton in that order.

The next scheduled stop is at Carlsbad, New Mexico. The caravan then will re-enter Texas and go by Guadalupe Peak, and Dell City to El Paso.

Near Albany the visitors will have an opportunity to witness two reminders of the stagecoach days. The state herd of Longhorn cattle from Fort Griffin State Park will be rounded up for viewing. Nearby, the travelers can look at the remnants of one of the Butterfield stage line blacksmith shops.

The caravan will stick close to the way traveled by the mail stages. W. M. Jones of Houston, publisher of a book on the topic, says there are 31 highway markers of the Overland Mail in Texas, and that nineteen of them are on the Butterfield stage route.

Reduced grades, better crossings, and cut distances account for changes in the route made possible by modern road engineering.